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ABSTRACT

This study examined the effect of school attendance, use of English-as-a-Second Language (ESL) services, and language spoken at home on Hispanic students' performance. The academic performance of 101 Hispanic first graders in intensive, regular, and bilingual programs was measured by standardized test scores in reading and mathematics, and report card grades. Students with no kindergarten experience earned a higher median score on the reading test than students with kindergarten experience. Students with kindergarten experience earned a higher median report card grade. Students in intensive programs had the highest median score in the reading test, and students in regular programs had the highest score in the mathematics test and the highest report card grade. Students who had better than median attendance scored better on the standardized tests and had higher report card grades than students below the median. Students in the intensive ESL group had higher median scores on the reading test and higher report card grades in reading than students in the beginner ESL group. Students who live in homes where English is spoken had higher scores and grades than students in homes where Spanish is spoken. Five references are cited. (BC)

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A STUDY OF THE FACTORS WHICH CONTRIBUTE TO THE ACADEMIC PERFORMANCE OF FIRST GRADE AT-RISK HISPANIC STUDENTS AT A SCHOOLWIDE PROJECTS FACILITY

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Introduction

Hispanic children account for ten percent of the student enrollment in Philadelphia's public schools, a rate which varies by one percent through the grades. These students cluster in the city's economically deprived areas and form a majority in the schools which they attend. Most of these schools are eligible for Chapter 1 services. The students, in turn, qualify for these services through low scores on standardized tests.

The literature on economically deprived elementary school students is abundant and touches every aspect of their lives in school and beyond. There is a body of research on Hispanic students who are economically deprived, but this research contains little information on the variables which contribute to academic performance.

We based our design on the recent literature. Hallinan (1988) constructed a model for student achievement under Chapter 1. The writer found that the students most likely to receive these services were blacks and Hispanics in large cities and rural areas. While selection criteria varied, standardized tests, grades and observations were usually part of the mix. Some schools assigned children to Chapter 1 programs regardless of their achievement while others restricted these services to low achievers. Hallinan found that program effectiveness was determined by the quality and quantity of instruction, factors which contributed to perceptions of success as well. Interactions between teachers and students, expectations, labeling and peer influence seemed to influence performance.

Christner (1987) reported that children enrolled in Schoolwide Project sites had higher reading test scores than their counterparts enrolled in Chapter 1 schools. Differences were slight and the writer balanced this finding against the additional costs for a Schoolwide Project program. Virtually all of the students involved in the Schoolwide Project were Hispanic. However, small numbers of students and classrooms limit the findings' generalizability.

Gersten (1989) claimed that disadvantaged five year-old students can be taught to read in kindergarten. Offering an academic curriculum based the principles of effective teaching is critical for success. Gersten attended to the difficulties associated with these programs but held the opinion that the efforts were worthwhile.

Dunn (1988) noted that Hispanics are the fastest growing ethnic group in America. He claimed that the scholastic development of Hispanic children across the

country has been poor. However, Dunn failed to take mobility into account. We intend to use this variable in future research efforts.

Hall (1989) studied the relationships between first grade achievement and nine variables. Hall's variables included attendance, ethnicity, sex, home support, language and preschool experience among others. The investigator used standardized test scores and demographic data in a series of multiple regression analyses. Working with an ethnically diverse sample of 119 students, Hall found that ethnicity was a predictor variable in her five analyses. In each one, ethnicity was combined with one or more additional variables.

Hall stated that her variables accounted for 18 percent of the variance in scores. Since other factors accounted for 82 percent, Hall concluded that her variables were too closely related to each other to identify meaningful differences. She suggested that other investigators look at variables which are not closely tied to one another. Ethnicity was linked to all of the dependent variables. Therefore, Hall suggested that her study could be replicated while controlling this variable. Our approach follows Hall.

While our literature review showed that researchers were interested in the area we examined, no one had taken steps to determine the effect of our variable set on performance. Thus, our research was designed to fill this opening in the literature

Specifically, we addressed this shortcoming by determining the influence of a set of variables on Hispanic student performance over a one year span, from the end of the students' kindergarten year to the end of first grade. We used City-Wide test scores in reading and mathematics, reading levels and report card grades in these subjects for our dependent variables. For our independent variables, we used attendance, use of ESOL services and whether or not English was spoken at home. We used the students' first grade assignment; regular, transitional, bilingual or intensive as a mediating variable.

The Setting

We conducted our study in a school where the enrollment was 65 percent Hispanic. The school qualified for Schoolwide Projects, a program which allows schools to offer remedial programs through their grades to all students regardless of their eligibility for supplementary services. Chapter 1 funds and other funds were used to support

Schoolwide Project activities. Specifically, money was used to underwrite professional and paraprofessional positions and purchase materials and supplies.

Schoolwide Project funds were used to underwrite five teaching positions, and twenty-seven parttime and three fulltime paraprofessional positions. Three teachers served as support personnel and two took classroom assignments. As to the paraprofessionals, Basic Skills Assistants served on a parttime basis and Classroom Assistants, on a fulltime basis.

Findings

The Sample

Our sample was made up of 101 Hispanic students, 40 boys and 61 girls. They were part of a larger group which included 186 white and black students. Table 1 shows this information.

Table 1

Summary Data: Number of Students by Sex and Race/Ethnicity

	Race/Ethnicity			
	White	Black	Hispanic	Total
Sex				
Male	3	48	40	91
Female	2	32	61	95
Total	5	80	101	186

We added the white and black students together for the study. The small numbers of white males and females did not permit meaningful analyses. Therefore, we combined the groups and worked with Hispanic and Non-Hispanic students through the course of the study.

Achievement Measures

Standardized Test Performance: The School District of Philadelphia administers customized standardized tests in Reading/Language Arts and Mathematics to students at all grades levels. They are administered twice a year. Table 2 shows the overall medians and those for each study group.

Table 2

Standardized Test Performance by Study Groups: Reading/Language Arts and Mathematics Median and (Number)

	Test	
	Reading/Language Arts	Mathematics
Group		
Overall	21 (183)	46 (180)
Hispanic	20 (100)	46 (97)
Boys	18 (40)	46 (38)
Girls	21 (60)	46 (59)
Non-Hispanic	21 (83)	36 (83)
Boys	21 (50)	27 (50)
Girls	25 (33)	57 (33)

In Reading/Language Arts, the median for the entire group was 21. The difference in the median between Hispanic students and Non-Hispanic students was a single point, 20 for the Hispanics and 21 for the Non-Hispanics. By sex, girls earned a higher median score than boys in both groups. In the Hispanic group, the difference in the medians was three points, 21 and 18. In the Non-Hispanic group, the difference was four points, 25 and 21.

For Mathematics, the overall median was 46. In the Hispanic group, both boys and girls had the same median, 46. In the Non-Hispanic group, the median was 36. Here, the girl's median was 57 and the boy's, 27.

Report Card Grades: We collected report card grades in Reading/Language Arts and Mathematics for our work. Tables 3 and 4 show these results in terms of the percentage of those students earning a grade of A or B and those earning a grade of C or below.

Table 3

Report Card Grades by Study Groups: Number and (Percentage) of Students Earning Grades of A or B and C and Below: Reading/Language Arts

	Grade			
	A or B		C and Below	
Group				
Overall	91	(51%)	89	(49%)
Hispanic	49	(52)	46	(48)
Boys	19	(48)	20	(52)
Girls	30	(54)	26	(46)
Non-Hispanic	42	(49)	43	(51)
Boys	22	(43)	29	(57)
Girls	20	(59)	14	(41)

Table 4

Report Card Grades by Study Groups: Number and (Percentage) of Students Earning Grades of A or B and C and Below: Mathematics

	Grade	
	A or B	C and Below
Group		
Overall	91 (51%)	89 (49%)
Hispanic	60 (60)	40 (40)
Boys	25 (62)	15 (38)
Girls	30 (54)	26 (46)
Non-Hispanic	47 (55)	38 (45)
Boys	25 (49)	26 (51)
Girls	35 (58)	25 (42)

Reading Book Levels: We collected reading book levels for the students and found that the Non-Hispanic students had a median at Book 2 and Hispanic students at Book 1. Table 5 shows these data.

Table 5

Median Reading Book Levels by Study Groups

Group	Book Level	Number
Overall	One	(186)
Hispanic	Primer	(101)
Boys	Primer	(40)
Girls	One	(61)
Non-Hispanic	Two	(85)
Boys	One	(51)
Girls	Two-One	(34)

Attendance:

We collected attendance data for our study groups and found that Hispanic females were more likely to be absent than Hispanic males and their Non-Hispanic peers. These data appear in Table 6.

Table 6

Attendance by Study Groups: Number of Days Absent - Median (Number)

Group	Days Absent	
Overall	16	(186)
Hispanic	19	(101)
Boys	15	(40)
Girls	23	(61)
Non-Hispanic	13	(85)
Boys	13	(51)
Girls	13	(34)

Achievement Measures for Hispanic Students

We collected data on five variables for the study groups: (1) Kindergarten Experience, (2) Placement, (3) Attendance (4) ESOL Status and (5) Language Spoken at Home. We examined each variable in accordance with each achievement measure. Table 7 shows the medians for students who had some kindergarten experience and those who did not.

Table 7

Hispanic Student Performance by Kindergarten Experience: Median and (Number)

Measure	No Kindergarten	Kindergarten
Standardized Tests		
RELA	21 (30)	18 (70)
Mathematics	46 (28)	46 (29)
Report Card Grades		
RELA	C (27)	B (68)
Mathematics	B (31)	B (69)
Reading Book Level	Primer (31)	Primer (70)

The data displayed in Table 7 show that students with no kindergarten experience earned a higher median in the Reading/Language Arts portion of the School District's City-Wide standardized test (21 and 18). Students with some kindergarten experience earned a higher report card grade in Reading/Language Arts (B and C). There were no differences in performance on the remaining measures, standardized test performance in mathematics, mathematics report card grade and reading book level.

The data displayed in Table 8 show performance by class placement, There were three categories for this variable, Intensive, Regular and Bilingual. Nine students were categorized as Intensive. These students have limited ability in English. Twenty-two students were categorized as Bilingual. These students are able to function in both English and Spanish. Sixty students were assigned to classes which followed the School District's regular program.

Table 7

Hispanic Student Performance by Kindergarten Experience: Median and (Number)

Measure	No Kindergarten	Kindergarten
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RELA	21 (30)	18 (70)
Mathematics	46 (28)	46 (29)
Report Card Grades		
RELA	C (27)	B (68)
Mathematics	B (31)	B (69)
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Table 8

Hispanic Student Performance by Class Placement
Intensive, Regular and Bilingual
Median and (Number)

Measure	Intensive	Regular	Bilingual
Standardized Tests			
RELA	49 (9)	25 (60)	16 (22)
Mathematics	57 (8)	67 (59)	7 (22)
Report Card Grades			
RELA	C (9)	B (60)	C (16)
Mathematics	B (9)	B (59)	B (22)
Reading Book Level	Primer (9)	One (60)	Primer (22)

According to the data displayed in Table 8, the students assigned to the Intensive program had the highest median in the Reading/Language Arts portion of the School District's City-Wide test (49). These students were followed by their counterparts in the Regular program (25) and the Bilingual program (16), In Mathematics, the students enrolled in the Regular program had the highest median (67). These students were followed by the students enrolled in the Intensive program (57) and the Bilingual program (7). The students in the Regular program had the highest Report Card Grade median for Reading/Language Arts, B, while the remainig groups had a median of C. For Mathematics Report Card Grade, the three groups had the same median, B. For Reading Book Level, the Regular group had a median at Book One while the others had the same median, Primer.

Table 9 presents achievement data by attendance. We used the attendance median for the Hispanic students in our sample as a cut score and found that students who were below the median in number of days absent had higher performance scores in each category than those who were above the median.

Table 9

Hispanic Student Performance - Group Achievement Median - by Attendance Median - Number of Days Absent - Median and (Number)

	Attendance (Number of Days Absent)	
	Above Median	Below Median
Measure		
Standardized Tests		
RELA	18 (49)	21 (51)
Mathematics	27 (48)	67 (49)
Report Card Grades		
RELA	C (39)	B (48)
Mathematics	B (38)	A (47)
Reading Book Level	Primer (50)	One (51)

Students who were below the median in terms of the number of days absent earned standardized test scores of 21 and 67 in Reading/Language Arts and Mathematics, respectively. Those above the median had scores of 18 and 27. For Report Card Grades, students who were below the median earned grades of B and A in Reading/Language Arts and Mathematics, respectively, while their classmates who were more likely to be absent had grades of C and B. For Reading Book Level, the students who were below the median read at Level One and those above, at Primer.

Table 10 shows the data dealing with student performance by ESOL service. There were three service categories, Intermediate, Beginner and None. Twelve students were in the Intermediate category, thirty-two in the Bilingual category and fifty-seven received no service.

Table 10

Hispanic Student Performance by ESOL Service
Intermediate, Beginner and None
Median and (Number)

Measure	Intermediate	Beginner	None
Standardized Tests			
RELA	25 (12)	14 (32)	25 (26)
Mathematics	67 (12)	12 (32)	57 (53)
Report Card Grades			
RELA	B (12)	C (26)	B (57)
Mathematics	B (12)	B (31)	B (57)
Reading Book Level	Primer (12)	Primer (32)	One (57)

Students in the Intensive group and No Service group had the same median for Reading/Language Arts performance on the School District's standardized measure, 25. Students in the Beginner group had a median of 14. For Mathematics, the Intermediate group median was 67, the No Service group, 57 and the Beginner group, 12. As to report card grades, the Intermediate and No Service groups earned a median of B while the Beginner group had a median of C in Reading/Language Arts. For Mathematics, the three groups had the same median, B. The No Service group had a median of One for Reading Book Level and the Beginner and Intermediate groups, had medians at the Primer level.

We collected information on the primary language spoken in the student's home, English or Spanish. These data are presented in Table 11.

Table 11

Hispanic Student Performance by Language Spoken at Home - English or Spanish
Median and (Number)

	Language	
	Spanish	English
Measure		
Standardized Tests		
RELA	16 (32)	21 (68)
Mathematics	15 (32)	57 (65)
Report Card Grades		
RELA	C (25)	B (62)
Mathematics	B (24)	B (61)
Reading Book Level	Primer (32)	One (69)

The data show that students who live in homes where English is spoken achieve at higher levels than their counterparts who live in homes where Spanish is spoken in most instances. The groups reached a similar level of achievement for Mathematics Report Card Grades. Here, both groups achieved at a median grade of B.

Summary

Generally, the Hispanic students in our study achieved at roughly the same levels as the Non-Hispanic students. In fact, differences by gender for standardized test scores in the Non-Hispanic cohort were greater than those between the two primary groups. The Hispanic students were more likely to earn grades of A or B in Reading/Language Arts and Mathematics than their Non-Hispanic peers. For Reading Book Level, the Non-Hispanic group median was Book Two and the Hispanic median was Primer. The Non-Hispanic students were less likely to be absent than their Hispanic peers. While the median number of days absent was 13 for Non-Hispanic boys and girls, the medians for the Hispanic students by gender differed by eight days, 23 for girls and 15 for boys.

Among the Hispanic students, kindergarten experience seemed to have little effect on student achievement. We

treated this experience as a discrete variable. If we studied it as a continuous variable, the finding could differ.

For Class Placement, students enrolled in the Intensive program had the highest median standardized test score in Reading/Language Arts while those enrolled in the Regular program had the highest score in Mathematics. As to Report Card Grades, students in the Regular program earned a median of B while their counterparts earned Cs. For Mathematics, all of the groups had medians of B. All of the groups had medians at the Primer level for Reading Book.

Students who were below the median in the number of days absent had higher medians than those who were above the median in the five achievement areas we measured. For ESOL service, those in the Intermediate and No Service groups had the same median which exceeded the Beginner group median. For Mathematics the Intermediate group had the highest median. In Reading/Language Arts Report Card Grades, the Intermediate and No Service groups had the same median which exceeded that of the Beginner group. In Mathematics Report Card grades, all of the groups had the same median. The No Service group had a higher median than the remaining groups which had the same median.

Students who lived in homes where English was spoken exceeded their peers who lived in homes where Spanish was spoken in all of the areas we measured except Mathematics Report Card grades. Here, both groups had the same median

In summation, the Hispanic first grade students who were enrolled in a Schoolwide Project school performed as well as their Non-Hispanic counterparts. The variables we used to explore differences in the Hispanic student cohort supported our intuition For example, students who came from homes where English was spoken reached higher levels of performance than those who came from homes where Spanish was spoken.

Performance in mathematics was interesting. Here, the Hispanic students performed at a higher level than their Non-Hispanic counterparts. Aside from attendance and Language Spoken at Home, mathematics achievement within the Hispanic group varied slightly.

Discussion

Schoolwide Projects seemed to have a positive influence on first grade Hispanic student achievement. Naturally, first grade students tend to vary in their

behaviors from day to day and these findings may be transitory. Intuitively, it would appear that students coming to school with the need to learn another language or improve their communication skills in that language would be at a disadvantage to those who have already mastered these skill. However, our findings showed that the Hispanic students performed at least as well as their peers. The reason for this performance differential may be attributed to a number of factors, many of which may be embodied in Schoolwide Projects.

These data are too early to form program decisions. Our numbers are small and our students are young. We intend to track our students through the years in order to determine how they perform academically. Perhaps other researchers will look at Schoolwide Projects as well and provide information for program decisions.

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